

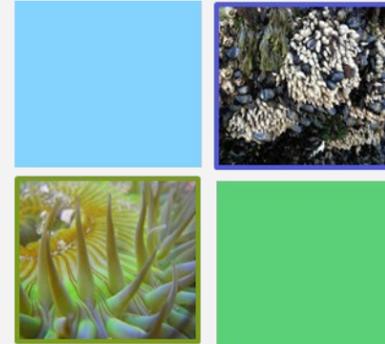
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January 2015



West Coast Tribal Marine Planning

Working to Develop a Common Planning Framework and Data Standards

BACKGROUND

The ocean, a provider of sustenance and wellbeing, has been integral to the lifeways of coastal tribes since time immemorial. As original stewards, coastal tribes maintain a responsibility to continue this intrinsic connection with the marine environment. As sovereign nations, many Pacific coastal tribes also retain certain inherent, unceded, treaty and/or federally-protected rights to govern, access, harvest, and/or manage certain marine areas and/or resources. With concerns over the health of the ocean and impacts from climate change, there is an increasing need for science- and information-based tools that can help advance tribal interests and address management challenges related to multiple uses of the ocean.

Marine planning is one way in which tribes may strategically plan for the stewardship and acceptable uses within particular geographies of interest to help make decisions that ensure sustainable ocean activities. To plan for the unique needs of each sovereign, it is important that each tribe develop a distinct marine plan. However, as coastal tribes, the Pacific Ocean creates an intrinsic connection. Thus, there is also great value in planning, communicating, and collaborating across tribal sovereigns.

Developing a common planning framework and data standards for tribal marine planning on the West Coast is one way this collaboration can occur. It provides for the development of tribal (spatial) marine plans that are distinct and may (or may not) be completed independently, but are ultimately



consistent in approach and are interoperable. This approach also provides an opportunity for tribes to leverage the limited resources available by providing a foundation from which to begin.

This booklet seeks to provide a summary guide, with a discussion of considerations raised, for tribal marine planning on the West Coast. It summarizes a common tribal marine planning framework, as well as specific methods and tools

that have resulted from an initial regional engagement of coastal sovereign tribes of Washington, Oregon and California. This project has been facilitated by the Smith River Rancheria of Tolowa Deeni' and is funded in part through a federal grant from the Regional Ocean Partnership Funding Program, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.



Initiating Dialog Across West Coast Sovereigns

In April 2013, an Indigenous Ocean Science Forum (IOSF) was held with coastal sovereign tribal nations in Washington, Oregon, and California. An objective of the meeting was to begin the discussion around the interest and potential for developing inter-tribal coordination on issues of regional ocean governance and tribal marine (spatial) planning. Hosted by the Smith River Rancheria, with support through the National Oceanic and Atmospheric Administration Regional Ocean Partnership funding, the IOSF was held in Portland, Oregon at The Billy Frank, Jr. Conference Center. Attended by over 50 participants, including repre-

sentatives from 16 different coastal tribes and tribal organizations, the IOSF sought to build towards tribally-driven collaboration and communication, as well as provide an occasion to learn from one another. Representatives from the N^anwa^kolas Council, a consortium of First Nations from Vancouver Island, British Columbia also joined to share about their own First Nation-driven marine planning efforts, which is a model that could possibly be replicated in the West Coast region.

From this event, several Summary Themes were developed that demonstrate issues of importance and considerations moving forward for tribal marine planning, as seen on the adjacent page. For more details about the proceedings of the IOSF, including a detailed Summary Report and Presenter Presentations, please go to: <http://www.tolowa-nsn.gov/tcmsp/>



Common Planning Structure

This planning structure relies upon a nested hierarchy of management objectives and specific marine uses that are associated with a specific geography.

A Planning Unit is a distinct geographical marine area identified by a distinct unit number and name.



Management Objectives reflect particular management emphases and are identified within each planning unit.



Uses designate human interactions and activities within the ocean and include levels of acceptability.

Management Objectives	Emphasis
General Management (overarching)	ecosystem-based management, climate change considerations, marine pollution, ocean acidification, etc...
Cultural Heritage	cultural resources and continue cultural connections to the marine environment
Conservation and Protection	sustain, conserve, restore, and protect biodiversity
Sustainable Production	sustainable extraction of renewable living resources, such as fish, shellfish, mammals, and/or plants
Tourism and Recreation	non-commercial tourism and/or recreation, such as kayaking, sailing, snorkeling, wildlife viewing, surfing, etc...
Tribal Economic Self-Sufficiency	Tribal economic endeavors, such as commercial aquaculture, wave energy, commercial eco-tourism, etc...

MARINE USES AND ACTIVITIES	
RECREATION	CULTURAL
SCUBA/Snorkeling	Customary Fishing and Gathering from Shore
Swimming	Customary Fishing and Gathering Offshore
Surface Board Sports	Customary Hunting from Shore
Paddling	Customary Hunting Offshore
Sailing	Related to Ceremony
Motorized Boating	Related to Song
Wildlife Viewing	Related to Story
Tide Pooling	Residence/Village
Shore Use	Training
RECREATIONAL & COMMERCIAL FISHING, HUNTING & GATHERING	OTHER MARITIME
Pelagic Fishing	Commercial Shipping
Fishing with Benthic Mobile Gear	Cruise Ships
Fishing with Benthic Fixed Gear	Military Vessels
Kayak Fishing	Mining and Mineral Extraction
Dive Fishing	Offshore Aquaculture
Fishing from Shore	Coastal Aquaculture
Harvesting from Shore	Seawater Intake
Seaweed Harvest	Sewage Discharge
ENERGY	Ocean Dumping
Wind	Underwater Transmission Cables
Wave	
Ocean Current	
Tidal Current	
Ocean Thermal Energy Conversion	
Offshore Oil and Gas	

The terms used for "Marine Uses and Activities" are built upon *A Common Language of Ocean Uses*, developed by NOAA in collaboration with various stakeholders. This *Common Language* organizes 35 distinct human use categories into four sectors. The "Cultural Use" category is reserved for "Tribal and Indigenous Ocean Uses" and has been further refined for tribal marine planning purposes, as seen in the adjacent Table.

More information on this *Common Language* may be found at:

http://marineprotectedareas.noaa.gov/pdf/helpful-resources/common_language_ocean_uses_11_14_2013_final.pdf



Examples of Existing Sources to Access Credible Marine Geospatial Data

There are several existing sources of credible data that provide access to key datasets that may be incorporated into a tribal marine planning process. The Table below identifies several examples of federal, regional, and state geoportals, data registries, and/or data catalogs where credible marine geospa-



Gov't Level	Entity	Name of Integrated Dataset	Website Link
Federal	National Oceanic and Atmospheric Administration and the Bureau of Ocean and Energy Management	MarineCadastre.gov Data Registry	http://marinecadastre.gov/data/
Federal	Multi-agency	Data.gov Ocean-Data Catalog	http://catalog.data.gov/dataset?groups=ocean9585#topic=ocean_navigation
Regional	West Coast Governors Alliance on Ocean Health	West Coast Ocean Data Portal	http://portal.westcoastoceans.org/
State-WA	Washington Geographic Information Council, the Washington Department of Information Services, and the University of Washington Libraries	Washington State Geospatial Clearinghouse	http://metadata.gis.washington.edu/geoportal/catalog/main/home.page
State - WA	Washington State Ocean Caucus	Washington Marine Spatial Planning Data Catalog	http://www.msp.wa.gov/explore/data-catalog/
State - OR	Oregon Department of Administrative Services	Oregon Geospatial Data Clearinghouse	http://www.oregon.gov/DAS/pages/irmd/geo/sdlibrary.aspx
State-CA	California Department of Technology	State of California Geoportal	http://portal.gis.ca.gov/geoportal/catalog/main/home.page
State - CA	California Department of Technology and the California Coastal and Marine Geospatial Working Group, and facilitated by the Ocean Protection Council	California Coastal Geoportal	http://portal.gis.ca.gov/geoportal/catalog/OPC/OPC.page

SUMMARY OF FINDINGS FROM THE INDIGENOUS OCEAN SCIENCE FORUM (IOSF)

- 1) The recognition of our responsibilities as stewards, our connection to place, our cultural identity and spirituality, and our inherent right to continue to rely upon the ocean cannot be ignored or understated in any tribal, federal, regional, state, or other marine planning process.
- 2) There is an interest in using tribally-driven marine spatial planning as one tool for asserting tribal rights, uses, and stewardship within the marine environment.
- 3) There is a need for each Tribe to build capacity in marine resource management, which directly relates to funding and staffing. The significance, immediacy, specific needs, and to which degree varies by Tribe. One funding means is to develop a new self-governance compacting mechanism with the Department of Commerce.
- 4) Tribal capacity-building also relates to a need for various types and sources of data that ideally allow for interoperability. This data may include that which is generated by Tribes and that which is collected by some other credible source.
- 5) Data must be gathered with the highest concern for confidentiality. Towards this end, comprehensive traditional knowledge policies, methods of data aggregation and coding, and other means to protect any information considered sensitive must be explored and rigorously applied.
- 6) There should be a holistic approach to marine management that includes an ecosystem based management approach that includes humans as a part of that ecosystem and is based/influenced on indigenous traditional protocol and/or laws and science.
- 7) There is value for Tribal leadership and engagement in federal, regional, state, and local marine planning processes in advancing the interests of the participating Tribe. It is also important that these other processes have clear methods to engage Tribes as sovereign nations with unique rights and responsibilities.
- 8) There is interest for continued dialog and collaboration among many coastal Tribes in a more formal and consistent manner, such as a West Coast Indigenous Ocean Council.



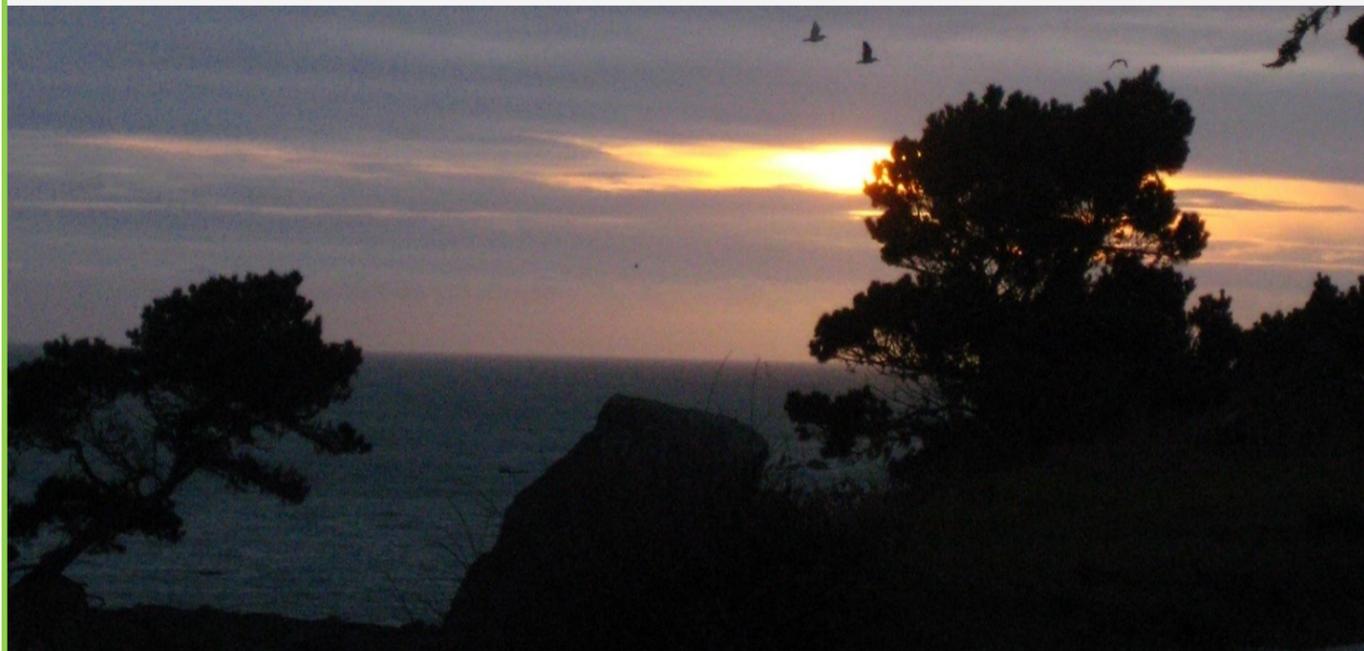


Working Towards Developing a Common Framework and Data Standards

The Indigenous Ocean Science Forum (IOSF) was a catalyst for continued dialog among several West Coast tribes on tribal marine (spatial) planning. This includes discussions around methods to incorporate sensitive knowledge, particularly traditional knowledge, into a tribal marine planning process. The Summary Themes highlight an interest to collaborate on a common framework and data standards when possible, while building individual tribal capacity for tribal marine planning to occur.

Smith River Rancheria continued to convene intertribal discussions after the IOSF, as well as conduct research and learning exchanges to identify solutions, opportunities and models to proceed with this independent, but common planning approach. This dialog was supplemented in early 2014 with the development of the West Coast Marine Planning Tribal Coalition (originally termed Partnership, instead of Coalition), through which the development process and dialog continues.

The following pages provide an overview of the tribal marine planning framework that has been developed thus far, as part of this ongoing collaborative process. These steps are not required to be done sequentially, but rather are meant to be a guide to stimulate tribal marine planning. This work builds upon successful models and best practices identified for marine (spatial) planning; however, it emphasizes, identifies, and discusses considerations that are unique for tribes. The views expressed herein do not reflect those of any particular tribe nor are they representative of West Coast tribes. Furthermore, nothing continued herein has been formally approved or adopted by any tribe.



Potential Methods for Documenting Traditional (Ecological) Knowledge

- Archival research and documented oral histories
 - Relational Database Management System
 - Geographic Information System
- Community participatory research
 - Community meetings
 - Individual interviews
 - Focus groups
- Mobile survey platform
- Non-digital maps
- Oral history interviews
- Field notes

Marine Traditional Knowledge Ethnographic Database (MTKED)

The Marine Traditional Knowledge Ethnographic Database (MTKED) is the result of a pilot project collaboration between Smith River Rancheria, Cher-Ae Heights Indian Community of the Trinidad Rancheria, Wiyot Tribe, and InterTribal Sinkyone Wilderness Council; with tool development performed by Far Western Anthropological Research Group. This tool seeks to address some of the complexities raised in respect to documenting traditional knowledge in a manner that can be useful for tribal marine spatial planning,

The purpose of the MTKED is to provide a common relational database model that may be used as a template for West Coast tribes to independently gather, store, search, and otherwise manage their own respective marine traditional knowledge in both a spatial and aspatial manner. This allows for the protection of that knowledge while increasing the likelihood for standardization and interoperability. There is too, however, the ability to easily build upon and customize the database to the needs of each particular tribe, as they may wish.

The MTKED seeks to document the relationships between places, resources, and activities contained within documented archival materials and oral histories in a standardized manner. This database operates with Microsoft Access and can be geospatially linked to ESRI ArcGIS. Over the coming year, these same pilot tribes will begin preliminary data entry of five keystone species, as part of a Marine Protected Area baseline monitoring project. This will undoubtedly identify areas and ways in which to improve the functionality of the MTKED, expand upon the data standards, and enhance quality assurance and quality control measures.

For more information on how the MTKED can be downloaded and used, refer to the Draft User Guide located at: <http://www.tolowa-nsn.gov/tcmsp/>

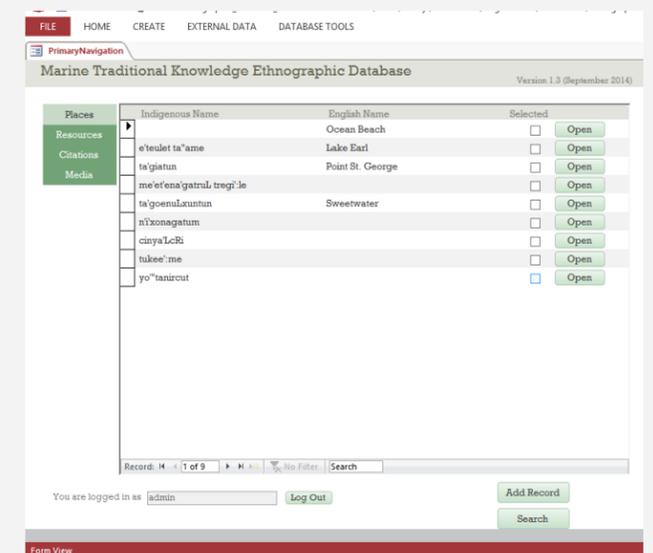
Useful Resources: -

— Living Proof: The Essential Data-Collection Guide for Indigenous Use-and-Occupancy Map Surveys. Tobias, T. 2009. Published by: Ecotrust Canada.

Available to order at: <http://ecotrust.ca/first-nations/new-book-use-and-occupancy-map-surveys-now-available>

— Haida Marine Traditional Knowledge Study Volumes 1-3, Council of the Haida Nation. Winbourne, J., Haida Marine Traditional Knowledge Study Participants, Haida Oceans Technical Team, and Haida Fisheries Program. 2011.

Available to download at: http://www.haidanation.ca/Pages/programs/marine_planning/



Gathering Traditional (Ecological) Knowledge

Gathering of traditional ecological knowledge, also referred to as traditional knowledge or indigenous knowledge, is identified as a high priority data set by participating tribes. It is also the dataset(s) that is most commonly identified as lacking for tribes across the region.

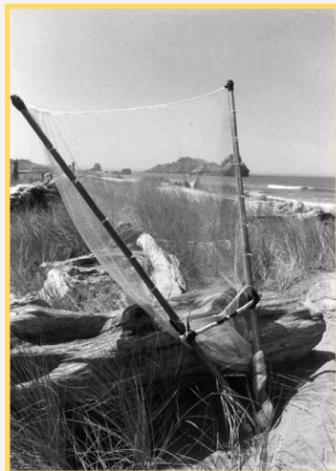
What is traditional ecological knowledge?

Traditional ecological knowledge is defined as a cumulative body of scientific knowledge, passed through cultural transmission, that evolves adaptively through time as a result of Indigenous Peoples living in and observing the local environment for many generations. This information system can contribute significantly to understanding the complexity of an entire ecosystem, providing for example, location-specific knowledge, place names, ecological features, knowledge of environmental linkages and processes, species taxonomies, species geographic patterns, the role of humans, conservation of biodiversity, and sustainable resource use. It also provides the worldview, including ethics, values, and social institutions of a particular indigenous group. This knowledge system is what informs customary management by Indigenous Peoples, which has been developed over countless generations to support sustainable resource use. This includes interrelated values, ethics, and ceremony tied to the integral role of humans in the environment that provides a conservation/stewardship framework.



Considerations when documenting traditional knowledge

There are strong concerns expressed by tribes about the documentation, ownership, storage, accessibility, and possible misuse of traditional knowledge. It is critical to take a data collection approach that supports the political and cultural sovereignty of each participating tribe and its community's intellectual property, while maintaining consistency in the research methodology and data collection. Several methods were identified that may be used to protect culturally (and other) sensitive information, which are briefly listed below. These factors are critical to allowing each tribe to drive traditional knowledge data collection and the way in which this sensitive information is captured and shared.



- Develop a traditional knowledge policy and procedures to provide administrative guidance for data collection, maintenance and access
- Ensure informed consent of respondents
- Ensure tribal leadership approval of data collection scope and methods
- Be mindful of outside funding sources used for data collection and ensure grant agreement and/or contract language sufficiently protects information, particularly when using public funds
- Develop methods for data aggregation, buffering, and coding

What is Tribal Marine (Spatial) Planning?

Generally speaking, marine plans incorporate ecosystem-based management, an approach that considers the dynamic and interconnected relationship between human activity and the ocean. Tribal marine planning allows a tribe to use the development of such plans to identify and advance tribal interests and strategies to address management challenges associated with multiple ocean uses. Tribal marine spatial planning is specific to the process of analyzing and allocating the spatial and temporal distribution of activities in specified marine areas to achieve certain cultural, ecological, social, and economic objectives. These are typically specified through a governance-driven process of the tribe. Tribal interests and strategies identified in a tribal marine (spatial) plan can also be used when engaging other governmental marine planning processes, as well as other matters of natural and cultural resource management and economic development.

How might West Coast tribal marine (spatial) planning relate to other marine planning processes occurring within waters along the Pacific Coast?

In **British Columbia, Canada**, many coastal First Nations are completing marine spatial planning processes that consider a comprehensive suite of marine uses. **MaPP, the Marine Planning Partnership** for the North Pacific Coast, is a partnership between the Province of British Columbia and 18 members of First Nations that is planning for marine uses and long-term ocean health on B.C.'s North Pacific Coast. This initiative uses the best available science and local and traditional knowledge to develop MaPP plans, which will provide recommendations for key areas of marine management, including uses,

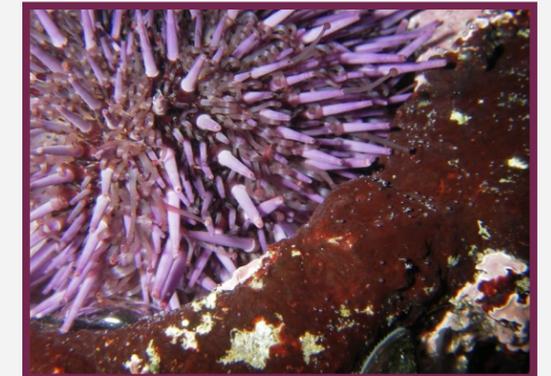


activities and protection. The plans will inform decisions regarding the sustainable economic development and stewardship of British Columbia's coastal marine environment. Starting with distinct plans for each First Nation, plans are harmonized regionally, and then integrated with the Provincial government's plan. This work is looked to as a model from which tribal marine planning may occur among West Coast tribes.

In the **United States**, President Obama signed an executive order creating a **National Ocean Policy** in 2010, which encourages "the development of coastal and marine spatial plans that build upon and improve existing federal, state, tribal, local, and regional decision making and planning processes." To guide a consistent planning framework within the segmented regions across the nation, the *Marine Planning Handbook*, was drafted, which can be informative when conceptualizing tribal planning. Although West Coast regional planning has not formally commenced, initial efforts to engage tribes and identify regional planning body representation was initiated in early 2014. Led by the federal co-lead, the National Oceanic and Atmospheric Administration, this included a *West Coast Marine Planning Tribal Engagement Assessment* that was conducted. Tribal marine planning provides an opportunity to more effectively address tribal interests in this federally-led regional effort.

For more information, please refer to the following websites:

- Marine Planning Partnership (MaPP):
<http://mappocean.org/>
- National Ocean Policy:
 - West Coast Regional Planning Body:
<http://www.westcoastmarineplanning.org/>
 - Marine Planning Handbook:
http://www.whitehouse.gov/sites/default/files/final_marine_planning_handbook.pdf



Planning Framework for Developing a Tribal Marine (Spatial) Plan

1. Establish the Necessary Tribal Capacity

To implement a tribal marine planning process successfully, it is essential to have the necessary personnel, technical expertise, and infrastructure capacity. Personnel requires the clear designation and allocation of resources to develop a Planning Team. A Planning Team is responsible for coordinating and implementing the marine planning process. Collectively, this Team should ideally have planning, marine policy, technical and scientific expertise, in addition to an ability to effectively coordinate and



communicate with the tribal leadership and community. For some tribes this currently exists, but for the majority, it will need to be acquired. This may include hiring additional staff and/or consultants, as well as enhancing current capacity by participating in training and other professional development opportunities. The number of people on a Planning Team is somewhat dependent on the size of the tribe and geography of focus. More so, however, it is reliant on the complexity in design of the final planning process, time and resource limitations and the level to which (new) data collection and analysis efforts must be undertaken. Infrastructure must also be addressed as part of capacity, which can be technology-based (e.g. computers, software, and servers) and/or physical (e.g. office space and equipment). This is dependent upon the final data collection, storage, and analysis tools selected for use and the development needs of a tribe's Planning Team.

2. Establish a Marine Planning Working Group

A Marine Planning Working Group should be established to provide guidance and input to the Planning Team throughout the process. This working group should be comprised of individuals that may represent key elements of the tribe and tribal community, based on the vision, goals, and objectives identified for a tribe's marine planning. Examples may include elders, customary and commercial harvesters, council members, natural and cultural resource-related committee/board members, departmental scientific and technical staff, and particular user groups within the tribe. The number of members on the working group should be limited to ensure active participation by each member, as well as efficiency. The selection process will vary according to tribal policies and procedures. Examples may include direct invitations to select individuals known for particular knowledge or expertise based on input from the Planning Team and tribal leadership or, perhaps an open nomination and formal selection process.



3. Develop a Shared Vision

To ensure that the tribe is developing a plan that has clear goals and objectives, the Planning Team must collaborate with the tribal leadership and Marine Planning Working Group to develop a shared vision for marine planning. This vision may include the future scenario the tribe seeks to realize, the scope and geography of the marine planning area of interest, and the values from which the tribe shall draw from during planning.

12. Engage to Advance Tribal Marine Plan

Once a Tribal Marine Plan has been completed, it can be used as a tool to advance the vision and interests of the tribe internally, as well as to engage other governmental entities.

This outside engagement could be with other West Coast tribes, as supported by the common framework and the development of the West Coast Marine Planning Tribal Coalition. Recall, a fundamental purpose of the common framework is to provide the ability for tribal marine (spatial) plans to be coordinated and/or integrated, as able, among tribes along the West Coast. This provides for a consistency in design and approach that increases the ability to identify common areas of compatibility for possible collaboration, as well as and areas of potential disagreement.



This can also be for more effective engagement of a tribe in implementation of West Coast regional planning under the mandate of the National Ocean Policy. Having a clear understanding of the desires of the tribal community and leadership will greatly aid the ability of tribal representatives to advocate on behalf of their respective tribe's interests and geography. A Tribal Marine Plan can also be used in other state and local processes in which a tribe seeks to engage.

Tribal Marine (Spatial) Planning Framework Summary

Establish the Necessary Tribal Capacity

Establish a Marine Planning Working Group

Develop a Shared Vision

Develop a Work Plan for Process, Coordination and Communication

Conduct an Environmental Scan to Provide Context

Map Marine Conditions and Related Human Activities

Data Evaluation and Analysis

Develop and Evaluate Options for Achieving Desired Outcomes

Create a Draft Tribal Marine Plan for Input

Finalize Tribal Marine Plan

Ongoing Monitoring, Evaluation and Modification

Engage to Advance Tribal Marine Plan

9. Create a Draft Tribal Marine Plan for Input

A Tribal Marine Plan is the comprehensive document that captures the details of the preferred spatial plan, in addition, to a detailed description of the environmental scan, process, materials, analyses, information and guidance that were involved in the planning process, and outlined in the previous steps. An Table of Contents example of the type of information that may be covered in the tribal marine plan, is provided in the inset box. Input on the draft plan during development may include an iterative review process by the Marine Planning Workgroup. Once a draft is final, input can be garnered from the tribal community, committees/boards, the leadership, and others, as appropriate and according to tribal policies and procedures.

10. Tribal Marine Plan Approval

Once input is gathered on a final draft tribal marine plan and the necessary revisions have been made, the plan may be finalized and then presented to the tribal council, as the governing body of the tribe, for final approval. Approval from the tribal council may occur in various means, such as formal adoption by tribal resolution or an approved meeting motion. This step will proceed according to the policies, procedures, and preferences of a particular tribe.



11. Ongoing Monitoring, Evaluation, and Modification

To assess the effectiveness of the strategies identified in the final tribal marine plan, it is important to establish methods for ongoing monitoring and evaluation. This includes implementing the plan, monitoring and evaluating the effectiveness of the approach based on the baseline existing conditions and the desired future use scenario, and modifying the plan, as needed, on a routine basis.

Sample Table of Contents

INTRODUCTION

- Plan Purpose and Intent
- Plan Area
- Plan Context
- Plan Scope
- Planning Process
- Information and Sources

PLAN AREA DESCRIPTION

- Cultural Overview
- Marine Ecosystem Overview
- Community Overview
- Economic Overview

GENERAL MANAGEMENT DIRECTION

- Plan Area Vision and Planning Goals
- Management Values and Principles
- General Issues, Objectives, and Strategies

AREA SPECIFIC DIRECTION

- Planning Units
- Management Objective Designations
- Uses and Activities
- Individual Planning Units and Designations

MONITORING AND EVALUATION

- Monitoring Approach and Indicators
- Evaluation Measures and Process
- Plan Review Process

CONCLUSION

4. Develop a Work Plan for Process, Coordination and Communication

Having a work plan for how the planning process will be conducted is important to ensure that expectations are clear, as well as to keep things manageable, on task, according to schedule and transparent. This work plan should minimally include clear goals and objectives, roles and responsibilities, schedule for tasks and identified benchmarks, available and required resources, and measurable outcomes. The work plan should also provide clear paths of communication and coordination among the Planning Team, Marine Planning Working Group, tribal leadership, tribal community, and others as necessary. This should include designating points in the process for input and review. The approach should include routine Planning Team and Marine Planning Working Group meetings. Moreover, updates should be provided to the tribal leadership, as well as opportunities for review and final approval of the marine plan. There should also be opportunities for outreach and input from the tribal community, which may include an introductory meeting to initiate the planning process, frequent updates through routine outreach means (e.g. tribal newsletter and website), in addition to review and input on alternative future use scenarios and draft marine plan. How communication with other West Coast tribes, federal and state agencies, nongovernmental organizations, and others should also be discussed and determined as part of this work plan.

Goals and Objectives

Roles & Responsibilities

Schedule of Tasks

Available & Required Resources

Measurable Outcomes

5. Conduct an Environmental Scan to Provide Context

The historical, cultural, political, legal, and socioeconomic context from which the tribe is operating is important to assess, document, and incorporate as part of the marine planning process. Some fundamental elements of this environmental scan may include an overview of a tribe's cultural values,



customs, lifeways, and history, as well as laws and governance pertaining to the ocean. It may include federal, tribal, and state law and policy, including the historical context in which it was and continues to be created, interpreted and expressed. An additional consideration related to the legal context for tribal marine planning, is that some perceive the need for this to occur as a key data set to map as part of the existing conditions and others see this as part of the later process of evaluating possible future use scenarios. Regardless, it should be identified how the results of the marine plan will enhance coordination and promote consistency in interpretation and application of existing laws and regulations. The socioeconomic context can help provide information about the demographic composition and economic drivers within the community and region. These elements (and others) all provide for the context from which tribal marine planning is grounded and expressed; it must be emphasized that this will be distinct for each tribe.

Legal Framework Analysis Related to Marine Spatial Planning

The Quileute Natural Resources Department of the Quileute Tribe conducted an analysis of the federal and state laws that may influence tribal marine planning on the West Coast. For more information on that analysis, please contact them directly.



6. Map Marine Conditions and Related Human Activities

The existing conditions and human use activities must be mapped to provide a baseline from which planning can occur and evaluation on intended outcomes can be measured.

Assess Existing Data and Gaps: All efforts should be made to provide the best available geospatial data to map existing conditions in order to investigate, assess, forecast and analyze conditions. As appropriate to the scope, scale, and subject matter of identified goals and objectives, an assessment of existing data and data gaps should be conducted. There are several existing sources of credible data that may provide key datasets to incorporate into a tribal marine planning process. The Table on **Page 14** identifies several examples of federal, regional, and state geospatial data registries, and/or data catalogs where credible marine geospatial data and/or metadata has been compiled and may be accessed. Additionally, several tribes have robust data sets (e.g. water quality, fisheries stock and catch data, significant sites), which internally, they can integrate with those datasets harvested from other sources. The documentation of traditional ecological knowledge is consistently identified as a high priority data set essential to tribal marine planning, but also one that is lacking. This may include documenting resource, ecological, oceanic and climatic observations, along with customary human use activities and practices.

Gather New Data: Data collection efforts of priority data sets identified through the gap analysis should be undertaken. In some instances, these efforts may be outside of the current resource and/or capacity capabilities of a tribe and so partnerships, as well as acquiring and leveraging resources will be necessary. One such example is a complete high-resolution geospatial dataset of marine habitats in waters off of Washington state. Points of consideration, that have been identified as important when documenting traditional ecological knowledge are briefly synthesized on **Pages 12-13**. So too are the outcomes of a pilot project to create a system to collect, gather, search, analyze, and incorporate this particular type of information, as documented through written archival material and documented oral histories.



Data Standardization: To ensure geospatial data consistency and accuracy, it is important that new data is developed according to predetermined standards. Similarly, any existing geospatial data that is pulled into a tribal marine planning tool or system should also conform. Examples can include for example, ensuring consistent projec-

tions/coordinate systems, metadata standards, geographic extent, organization of a data catalog, terminology, and collecting and processing systems as part of quality assurance/quality control protocols. As part of the pilot project to develop the Marine Traditional Knowledge Ethnographic Database (described in more detail on **Page 13**), some data standards, rules by which data are described and recorded were developed to support consistency and interoperability among tribes. These are documented as part of a Draft User Guide (September 2014).



7. Data Evaluation and Analysis:

After data has been compiled and the existing conditions have been mapped, evaluation and analysis can commence. This begins with defining and analyzing existing conditions, including identifying spatial conflicts and compatibilities of management and/or uses, in addition to identifying trends in cultural, economic and environmental conditions. Based on the identified vision, goals and objectives define the preferred future conditions from which future use scenarios can be developed.

8. Develop and Evaluate Options for Achieving Desired Outcomes

Identify alternative future use scenarios based on the desired outcomes identified. These scenarios can be structured around the common planning structure and standards that have been developed as a template for tribal marine spatial planning, which are described on **Page 15**. Based on the analysis of scenarios in relationship to the desired future conditions, a preferred spatial scenario is selected.

The Planning Team can facilitate the process and produce the data products, evaluation, and analysis. It should be the responsibility of the Marine Planning Working Group to provide direction on the content of alternative spatial plans of management objectives and future uses. These alternatives can be presented to the leadership, committees, community, and others within the tribe, as appropriate, to solicit input on a preferred alternative. Workshops, meeting presentations, outreach materials and web-based spatial planning tools are examples of methods that could be used. The tribal council selects the preferred alternative and follows necessary tribal policy and procedures to adopt the preferred spatial plan as an element of the larger Tribal Marine Plan.

Available Tools:

There are many tools identified by the federal government that can be used and/or developed for data collection, evaluation and analysis. A listing of many of these resources is available on the Tools page of the National Ocean Council's marine planning data portal available at:

www.data.gov/ocean/page/ocean-tools

A geospatial marine planning tool, such as SeaSketch or Marine Planner would greatly aid in the sharing and evaluation of future use scenarios. Although these technologies rely on some open source material, customization for a particular tribal planning process would be necessary.

